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ART. X.—CRITICAL NOTICES.

1. *The Principles of Chemistry, illustrated by Simple Experiments.* By DR. JULIUS ADOLPH STOCKHARDT. Translated from the Third German Edition, by C. H. PIERCE, M. D. Cambridge: John Bartlett, 1850. 8vo. pp. 656.

THE name of this author, so well known among practical men as one of the editors of the "*Polytechnisches Centralblatt*," would alone authorize the conclusion, that his book is preëminently clear, concise, practical in all its allusions to art, simple in its arrangement, and illustrated by experiments requiring no array of costly apparatus. It is a work worthy of its author, and which will bear the character we have given to it, even when subjected to the severest tests of critical analysis. Rather popular than philosophical, the style loses nothing of the precision adapted to science, though occasionally it seems to adopt the language of alchemy, and to clothe matter with the attributes of mind,—a spiritualization which we cannot commend. However well this may appear in German, when done into English, it becomes either puzzling or ludicrous, and reminds one of Punch's effusion,—“The Chemist to his Love.” We hope the good taste of the publisher will expurgate such faults in a new edition. The method pursued is perhaps the most valuable characteristic of the work. The division of the subject, if not quite original, is new for a text-book, and equally well adapted to teacher and learner. The facts are stated forcibly, while the great principles and laws of Chemistry are developed and explained in a manner equalled by few chemical works in our language, and surpassed by none except the elaborate “*Elements of Chemistry*,” by the late Professor Turner, of the London University. Many, whose notions of the laws of chemistry were not very precise, may remember how the beautiful section of Turner on the “proportions in which bodies unite,” gave them a new sense of the simplicity of the laws which govern “chemical combinations.” On this subject our author has few rivals. In the busiest of his experiments, he never loses sight of a principle to be established. Before the pupil becomes aware of the existence of definite laws, he finds himself familiar with the combining proportions, the saturating power, of radicals, acids, and bases. When at last the learner opens that chapter in the midst of the book, in which the “laws of chemical combination” are “reduced to a methodical system,” he finds that he is only pleasantly reviewing his previous knowledge, and impressing it anew on his memory by deductions and

associations equally logical and scientific. We must not omit to notice the practical illustrations, the ready and neat explanations of the chemical processes that are carried on, not only in extensive manufacturing establishments, but in the household chemistry of yeast-making, bread-making, brewing, soap-making, and divers culinary processes, which render this work better adapted to the teachers and pupils of our schools of every grade, to the solitary student and the apothecary's apprentice, than any other compendious treatises on the subject with which we are acquainted.

But though our general opinion of the work is very favorable, we hold that there are some heresies of doctrine in it, some erroneous statements, which should not have been allowed to go forth without an intimation that they had been perceived, if not corrected. We refer particularly to the *rationale* of the mode of preventing the evil effects of lead on the human system. Dr. Stockhardt justly avows that this metal is an insidious "enemy to human health," stealing its march upon its victims, and exhibiting its effects often "only after the lapse of years." He correctly classes lead among the slow poisons; but fatally mistakes when he says, that the sulphates present in spring water form in time a firm coating of insoluble sulphate of lead, which renders the use of leaden pumps, and, he might have added, leaden pipes, harmless. As the Professor "of Science applied to Art," whose name is appended to the introduction of this translation of Stockhardt, has shown that this is not true of all well water, and others have shown equally that it is not true of any water, we are surprised that the translator, himself a medical man, did not, on hygienic considerations alone, warn the readers of Stockhardt against pinning their faith and their health on such a statement.

The doctrine of vegetable physiology here set forth is essentially that of Liebig. However true this may be of plants in their normal state, it is found, when applied to cultivated crops, to be untenable. Practical farmers, acute vegetable physiologists, and expert chemists, among whom may be mentioned Professors Alubek and Schultz, in Germany, have established this fact; and it has been indirectly proved by the results of the patent manure devised by Liebig himself.

In the first American edition of this work, there were some minor errors, probably mere slips of the pen in the original, which we are glad to see corrected in the present edition.

We object to the latitude of the statement on page 55, where one measure of water is said to produce by its decomposition several thousand measures of oxygen and hydrogen gases. It would have been better to state exactly how much gas a measure of water would afford. We would call the attention of the editor to this statement, as it may serve to encourage the futile attempts

now making to illuminate the world by new lights. We find very few annoying errors of the press, unless the Webster fashion of spelling metre "meter" may be classed among them. Had we time and space, we should like to enter our reasons for protesting against the premature attempt made in this work to force upon us the centigrade scale. From our knowledge of the great inconveniences which have resulted and will result from its partial adoption, we trust the publisher will be induced to add to the centigrade the corresponding degrees on Fahrenheit's scale in a new edition, or append to the work a table for the conversion of one scale to the other. Our strong preference is for the centigrade; but our community cannot be expected to adopt it, so long as we use English weights and measures. When these are changed for the more correct and scientific usages of France, we shall hope to see the centigrade scale displacing that familiar household God, Fahrenheit's thermometer.

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2. — *The Annual of Scientific Discovery, or Year-Book of Facts in Science and Art; exhibiting the most Important Discoveries and Improvements in Mechanics, the Useful Arts, Natural Philosophy, Chemistry, &c. Together with a List of Recent Scientific Publications, a Classified List of Patents, Obituaries of Eminent Scientific Men, &c.* Edited by DAVID A. WELLS, A. M., of the Lawrence Scientific School, Cambridge, and GEORGE BLISS, JR. Boston: Gould & Lincoln. 1851. 12mo. pp. 428.

THE advancement of science, in all its departments, is so rapid nowadays, that it is a breathless undertaking to follow it, and many readers give up the chase in despair. The ordinary scientific periodicals do not aid one much in "keeping the run" of discovery and invention; each one gives an imperfect record, with reference usually to but few departments of research, and depending in a greater or less degree on what is done in its own neighborhood. We need a compendious and popular chronicle of all that is accomplished in the course of the year, adapted chiefly to the use of readers not specially devoted to science, but serving as a convenient index even for those who are. And this we understand to be the plan of the work before us, the second of its series, which, as well as its predecessor, evinces sufficient labor and care in its preparation, and serves as a very respectable monument to the scientific activity of the year which has